

MARSH, SECRETARY OF THE ARMY, ET AL. *v.* OREGON NATURAL RESOURCES COUNCIL ET AL.

CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

No. 87-1704. Argued January 9, 1989—Decided May 1, 1989

The Elk Creek Dam is part of a three-dam project designed to control the water supply in Oregon's Rogue River Basin. The Army Corps of Engineers (Corps) completed an Environmental Impact Statement (EIS) for the Elk Creek project in 1971, and, in 1980, released its final Environmental Impact Statement, Supplement No. 1 (FEISS). Since the Rogue River is a premier fishing ground, the FEISS paid special heed to water quality, fish production, and angling and predicted that the Elk Creek Dam would have no major effect on fish production, but that the effect of the Lost Creek and Elk Creek Dams on turbidity might, on occasion, impair fishing. After reviewing the FEISS, the Corps' Division Engineer decided to proceed with the project and, in 1985, Congress appropriated funds for construction of the dam, now one-third completed. Respondents, four Oregon nonprofit corporations, filed an action in the District Court to enjoin construction of the Elk Creek Dam, claiming that the Corps had violated the National Environmental Policy Act of 1969 (NEPA) by failing, among other things, to describe adequately the environmental consequences of the project; to include a "worst case analysis"; and to prepare a second supplemental EIS to review information in two documents developed after 1980. The first—the Cramer Memorandum—is an internal memorandum, prepared by two Oregon Department of Fish and Wildlife (ODFW) biologists based on a draft ODFW study on the effects of the Lost Creek Dam, suggesting that the Elk Creek Dam will adversely affect downstream fishing; and the second is a United States Soil Conservation Service (SCS) soil survey containing information that might be taken to indicate greater downstream turbidity than did the FEISS. The District Court denied relief on all claims and held, *inter alia*, that the Corps' decision not to prepare a second supplemental EIS to address the new information was reasonable. The Court of Appeals reversed, holding, among other things, that the FEISS was defective because it did not include a complete mitigation plan and "worst case analysis," and, with regard to the failure to prepare a supplemental EIS, that the ODFW and SCS documents brought to light significant new in-

formation that was probably accurate and that the Corps' experts failed to evaluate with sufficient care.

Held:

1. The Court of Appeals' conclusions that the FEISS was defective because it did not include a complete mitigation plan and a "worst case analysis" are erroneous for the reasons stated in *Robertson v. Methow Valley Citizens Council*, ante, p. 332. Pp. 369–370.

2. The Corps' decision that the FEISS need not be supplemented is not arbitrary and capricious and should not be set aside. Pp. 370–385.

(a) An agency must apply a "rule of reason" and prepare a supplemental EIS if there remains "major Federal action" to occur, and if the new information will affect the quality of the human environment in a significant manner or to a significant extent not already considered. Although not expressly addressed in NEPA, such a duty is supported by NEPA's approach to environmental protection and its manifest concern with preventing uninformed action as well as by Council on Environmental Quality and Corps regulations, both of which make plain that at times supplementation is required. Pp. 370–374.

(b) Court review of the Corps' decision is controlled by the "arbitrary and capricious" standard of the Administrative Procedure Act, 5 U. S. C. § 706(2)(a). Respondents' supposition that the determination that new information is "significant" is either a question of law or of ultimate fact and, thus, "deserves no deference" on review is incorrect since the resolution of this dispute involves primarily issues of fact concerning contentions that the new information is accurate and undermines the FEISS' conclusions, and that the Corps' review was incomplete, inconclusive, or inaccurate. Because analysis of the documents requires a high degree of technical expertise, this Court must defer to the informed discretion of the responsible agency. However, courts should not defer to an agency without carefully reviewing the record and satisfying themselves that the agency has made a reasoned decision based on its evaluation of the new information. Pp. 375–378.

(c) The Corps conducted a reasoned evaluation of the relevant information in a formal Supplemental Information Report (SIR) and reached a decision that was not arbitrary and capricious. The Corps carefully scrutinized the Cramer Memorandum—which did not reflect the neutral stand of ODFW's official position—and, in disputing its accuracy and significance, hired two independent experts who found significant fault in the methodology and conclusions of the underlying draft ODFW study. Although the SIR did not expressly comment on the SCS survey, in light of in-depth studies conducted in 1974 and 1979, its

conclusion that "turbidity effects are not expected to differ from those described in the 1980 EISS" provided a legitimate reason for not preparing a supplemental FEISS to discuss turbidity. Pp. 378-385.

832 F. 2d 1489, reversed and remanded.

STEVENS, J., delivered the opinion for a unanimous Court.

Solicitor General Fried argued the cause for petitioners. With him on the briefs were *Assistant Attorney General Marzulla*, *Deputy Solicitor General Wallace*, *Jeffrey P. Minear*, *Peter R. Steenland, Jr.*, and *Vicki L. Plaut*.

David A. Bricklin argued the cause for respondents. On the brief were *Neil S. Kagan* and *Michael D. Axline*.*

*Briefs of *amici curiae* urging reversal were filed for the Institute of Law and Public Health Protection by *Steven R. Perles* and *Scott C. Whitney*; and for the Northwest Forest Resource Council et al. by *Mark C. Rutzick* and *Douglas C. Blomgren*.

Briefs of *amici curiae* urging affirmance were filed for the State of California et al. by *John K. Van de Kamp*, Attorney General of California, *N. Gregory Taylor* and *Theodora Berger*, Assistant Attorneys General, and *Clifford L. Rechtschaffen* and *Mary Gray Holt*, Deputy Attorneys General, and by the Attorneys General for their respective States as follows: *Don Siegelman* of Alabama, *Grace Berg Schaible* of Alaska, *Duane Woodward* of Colorado, *Jim Jones* of Idaho, *Neil F. Hartigan* of Illinois, *Thomas J. Miller* of Iowa, *Robert T. Stephan* of Kansas, *Frederick J. Cowan* of Kentucky, *James E. Tierney* of Maine, *James J. Shannon* of Massachusetts, *Mike Moore* of Mississippi, *William L. Webster* of Missouri, *Hubert H. Humphrey III* of Minnesota, *Mike Greely* of Montana, *Robert M. Spire* of Nebraska, *Brian McKay* of Nevada, *Stephen E. Merrill* of New Hampshire, *Cary Edwards* of New Jersey, *Robert Abrams* of New York, *Lacy H. Thornburg* of North Carolina, *Robert H. Henry* of Oklahoma, *LeRoy S. Zimmerman* of Pennsylvania, *T. Travis Medlock* of South Carolina, *Charles W. Burson* of Tennessee, *Jim Mattox* of Texas, *Jeffrey Amestoy* of Vermont, *Mary Sue Terry* of Virginia, and *Charles G. Brown* of West Virginia; for the Environmental Defense Fund et al. by *Victor M. Sher*, *Todd D. True*, and *Tom Lustig*; and for the International Association of Fish and Wildlife Agencies by *Paul A. Lenzini*.

Briefs of *amici curiae* were filed for the Center for Environmental Education by *Nicholas C. Yost* and *William A. Butler*; and for the Pacific Legal Foundation by *Ronald A. Zumbrun* and *Robin L. Rivett*.

JUSTICE STEVENS delivered the opinion of the Court.

This case is a companion to *Robertson v. Methow Valley Citizens Council*, ante, p. 332. It arises out of a controversial decision to construct a dam at Elk Creek in the Rogue River Basin in southwest Oregon. In addition to the question whether an Environmental Impact Statement (EIS) prepared pursuant to the National Environmental Policy Act of 1969 (NEPA), 83 Stat. 852, 42 U. S. C. § 4321 *et seq.*, must contain a complete mitigation plan and a “worst case analysis,” which we answered in *Robertson*, it presents the question whether information developed after the completion of the EIS requires that a supplemental EIS be prepared before construction of the dam may continue.

I

In the 1930's in response to recurring floods in the Rogue River Basin, federal and state agencies began planning a major project to control the water supply in the Basin.¹ See, *e. g.*, ch. 346, 49 Stat. 439. In 1961 a multiagency study recommended the construction of three large dams: the Lost Creek Dam on the Rogue River, the Applegate Dam on the Applegate River, and the Elk Creek Dam on the Elk Creek near its confluence with the Rogue River. See H. R. Doc. No. 566, 87th Cong., 2d Sess., 7–89 (1962). The following year, Congress authorized the Army Corps of Engineers (Corps) to construct the project in accordance with the rec-

¹ As described by the Army Corps of Engineers:

“Lying within the southwest corner of Oregon, the Rogue River Basin drains a 5,060 square mile area in Jackson, Josephine, Coos, and Klamath Counties, as well as small portions of Del Norte and Siskiyou Counties in California Rogue River passes through vastly different environmental settings in the course of its journey from its upper reaches near Crater Lake to the Pacific Ocean at Gold Beach, Oregon. The climatological factors and other characteristics of the basin are such that floods are frequently experienced.” U. S. Army Corps of Engineers, Portland District, Elk Creek Lake Environmental Impact Statement, Supplement No. 1, p. 1 (Dec. 1980) (hereinafter FEISS).

ommendations of the 1961 study. See Flood Control Act of 1962, Pub. L. 87-874, §203, 76 Stat. 1192-1193. The Lost Creek Dam was completed in 1977, and the Applegate Dam was completed in 1981.

Plans for the Elk Creek Dam describe a 238-foot-high concrete structure that will control the run-off from 132 square miles of the 135-square-mile Elk Creek watershed. When full, the artificial lake behind the dam will cover 1,290 acres of land, will have an 18-mile shoreline, and will hold 101,000 acre-feet of water. The dam will cost approximately \$100 million to construct and will produce annual benefits of almost \$5 million. It will be operated in coordination with the nearby Lost Creek Dam, where the control center for both dams will be located. Its "multiport" structure, which will permit discharge of water from any of five levels, makes it possible to regulate, within limits, the temperature, turbidity,² and volume of the downstream flow. Although primarily designed to control flooding along the Rogue River, additional project goals include enhanced fishing, irrigation, and recreation.

In 1971, the Corps completed its EIS for the Elk Creek portion of the three-dam project and began development by acquiring 26,000 acres of land and relocating residents, a county road, and utilities. Acknowledging incomplete information, the EIS recommended that further studies concerning the project's likely effect on turbidity be developed. The results of these studies were discussed in a draft supplemental EIS completed in 1975. However, at the request of the Governor of Oregon, further work on the project was sus-

²"Turbidity is an expression of the optical property of water which causes light to be scattered and absorbed rather than transmitted through in straight lines. Turbidity is caused by the presence of suspended matter." *Id.*, App. E, p. 3. This optical property of water is most commonly measured using the Jackson Turbidity Unit (JTU). "A general rule of thumb guideline is that 5 JTU is the limit for drinking water, 10 JTU impairs flyfishing, 20 JTU impairs other fishing methods, and long-term 50 JTU water alters fish behavior." *Id.*, at 21.

pended, and the supplemental EIS was not filed to make it possible to analyze the actual consequences of the construction of the Lost Creek Dam, which was nearing completion, before continuing with the Elk Creek project. Following that analysis and the receipt of a statement from the Governor that he was "extremely interested in pursuing construction of the Elk Creek Dam,"³ the Corps completed and released its final Environmental Impact Statement, Supplement No. 1 (FEISS), in December 1980.

Because the Rogue River is one of the Nation's premier fishing grounds, the FEISS paid special heed to the effects the dam might have on water quality, fish production, and angling. In its chapter on the environmental effects of the proposed project, the FEISS explained that water quality studies were prepared in 1974 and in 1979 and that "[w]ater temperature and turbidity have received the most attention." FEISS 33. Using computer simulation models, the 1974 study predicted that the Elk Creek Dam might, at times, increase the temperature of the Rogue River by one to two degrees Fahrenheit and its turbidity by one to three JTU's.⁴ *Ibid.* The 1979 study took a second look at the potential effect of the Elk Creek Dam on turbidity and, by comparing the 1974 study's predictions concerning the effects of the Lost Creek Dam with actual measurements taken after that dam became operational, it "increased technical confidence in the mathematical model predictions . . . and reinforced the conclusions of the 1974 [study]." *Id.*, at 33-34. Based on these studies, the FEISS predicted that changes in the "turbidity regime" would not have any major effect on fish production,⁵

³See Letter from Governor Atiyeh of August 1, 1979, reprinted in *id.*, App. F.

⁴See n. 2, *supra*.

⁵The FEISS explained that suspended sediments can reduce fish production by clogging or injuring gill structures, by causing abrasions, by reducing food supply, and by making it more difficult for fish to locate what food is available by reducing visibility. FEISS 37. The study nonetheless concluded:

but that the combined effect of the Lost Creek and Elk Creek Dams on the turbidity of the Rogue River might, on occasion, impair fishing.⁶

Other adverse effects described by the FEISS include the displacement of wildlife population—including 100 black-tailed deer and 17 elk—and the loss of forest land and vegetation resulting from the inundation of 1,290 acres of land with the creation of the artificial lake. *Id.*, at 26, 38, 46. Most significantly, it is perfectly clear that the dam itself would interfere with the migration and spawning of a large number

“Much of the heavy suspended materials will settle out in Elk Creek reservoir so no downstream effect of siltation is expected. Average annual downstream turbidity will be the same with or without the project.

“No major adverse effect on fish production in the Rogue River is expected as a result of the changes in the turbidity regime as a result of the Elk Creek project. Minor effects on production can be expected in the reach of Elk Creek between the project and its confluence with the Rogue River during normal years when turbidity will be higher than without the project. However, the project will also provide periods when turbidity will be lower than without the project. The multi-level withdrawal capability which will be built into the Elk Creek project will provide the ability to minimize turbidity effects on fish production.” *Ibid.*

⁶The impact on fishing is described as follows:

“Increases in magnitude and extended duration of turbidity in the Rogue River are expected to result from operation of Elk Creek Dam. These increases could affect angling for salmonids in the Rogue because the ability of fish to see lures or flies is impaired by turbidity. Fly-fishing for resident trout and summer steelhead would be the most vulnerable to effects of turbidity. The fly-fishing season runs from late July into October. According to Rogue River guides and [Oregon Department of Fish and Wildlife] biologists, fly-fishing success declines at a turbidity level of 10 JTU or greater. Other fishing methods are not productive when turbidity exceeds 20 JTU. It is possible that fisheries at other times, such as in the winter, will be affected for short periods. It is not expected that outflow from Lost Creek and Elk Creek Dams would, under the worst conditions, ever cause turbidity in the Rogue River to exceed 13 JTUs during late summer and early fall.” *Id.*, at 36.

A “salmonid” is a soft-finned, elongated fish that has an upturned final vertebrae. See Webster’s Third International Dictionary 2004 (1981). Salmon and trout are two common salmonids. *Ibid.*

of anadromous fish,⁷ but this effect has been mitigated by the construction of a new hatchery.⁸ *Id.*, at 35. Finally, the FEISS found that no endangered or threatened species would be affected by the project. *Id.*, at 27.

On February 19, 1982, after reviewing the FEISS, the Corps' Division Engineer made a formal decision to proceed with construction of the Elk Creek Dam, "subject to the approval of funds by the United States Congress." App. to Pet. for Cert. 53a. In his decision, he identified the mitigation measures that had already been taken with respect to the loss of anadromous fish spawning habitat, as well as those that would "most likely" be taken to compensate for the loss of other wildlife habitat. *Id.*, at 56a-57a. He concluded that the benefits that would be realized from the project "outweigh the economic and environmental costs" and that completion would serve "the overall public interest." *Id.*, at 58a. In August 1985, Congress appropriated the necessary funds.⁹ Act of Aug. 15, 1985, Pub. L. 99-88, 99 Stat. 314. The dam is now about one-third completed and the creek has been rechanneled through the dam.

⁷"Anadromous fish are those which spend most of their life in the open sea, but which return as adults to freshwater streams . . . to spawn." *Puyallup Tribe, Inc. v. Washington Game Dept.*, 433 U. S. 165, 168 (1977).

⁸As described in the FEISS:

"Cole M. Rivers Fish Hatchery was constructed to mitigate the loss of anadromous fish-spawning habitat in Elk Creek, Applegate River, and the upper Rogue River, as well as to provide rainbow trout and kokanee for stocking in the reservoirs as mitigation for lost trout production. The hatchery is located about 0.2 miles downstream of Lost Creek Dam. It has a design capacity of 355,000 pounds of salmon and steelhead and 71,000 pounds of trout and kokanee. Production for Elk Creek would utilize approximately 14 percent of the total design capacity . . ." FEISS 35.

⁹In the Report accompanying this legislation the Senate Appropriations Committee stressed that it "included specific language in the legislation directing the Secretary of the Army, acting through the Chief of Engineers, to award a continuing contract for construction of the main dam for the Elk Creek Lake project." S. Rep. No. 99-82, p. 97 (1985).

II

In October 1985, four Oregon nonprofit corporations¹⁰ filed this action in the United States District Court for the District of Oregon seeking to enjoin construction of the Elk Creek Dam. Their principal claims were that the Corps violated NEPA by failing (1) to consider the cumulative effects of the three dams on the Rogue River Basin in a single EIS; (2) adequately to describe the environmental consequences of the project; (3) to include a “worst case analysis” of uncertain effects; and (4) to prepare a second supplemental EIS to review information developed after 1980.

After conducting a hearing on respondents’ motion for a preliminary injunction, the District Judge denied relief on each of the NEPA claims.¹¹ 628 F. Supp. 1557 (1986). He first held that courts must employ a standard of “reasonableness” in reviewing an agency’s compliance with NEPA. Under this standard of review, the court must “‘make a pragmatic judgment whether the EIS’s form, content and preparation foster both informed decision-making and informed public participation.’” *Id.*, at 1562 (quoting *California v. Block*, 690 F. 2d 753, 761 (CA9 1982)). Applying this standard, the District Judge concluded that the Corps had, in fact, taken a sufficiently “hard look” at the cumulative effects of the three dams and at the individual effects of the Elk Creek Dam. 628 F. Supp., at 1563–1565. He also con-

¹⁰ The four corporations, which are respondents herein, are the Oregon Natural Resources Council, the Oregon Guides and Packers Association, Inc., the Rogue Fly-fishers, Inc., and the Rogue River Guides Association.

¹¹ Respondents’ complaint also included claims under the Wild and Scenic Rivers Act (WASRA), 16 U. S. C. § 1278, and the Freedom of Information Act (FOIA), 5 U. S. C. § 552. However, prior to the hearing, respondents withdrew their WASRA claim. In order to facilitate prompt consideration of respondents’ motion for a preliminary injunction on the NEPA claims, the District Judge postponed consideration of the FOIA claim for a later date. After considering the NEPA claims, the District Judge directed the entry of final judgment pursuant to Federal Rule of Civil Procedure 54(b) to permit prompt appellate review.

cluded that a “worst case analysis” was not required because the Corps used state-of-the-art mathematical models, thus avoiding scientific uncertainty and the need to fill gaps in information with a worst case scenario. *Id.*, at 1567. Finally, the District Court held that the Corps’ decision not to prepare a second supplemental EIS to address new information was “reasonable.”

The new information relied upon by respondents is found in two documents. The first, an internal memorandum prepared by two Oregon Department of Fish and Wildlife (ODFW) biologists based upon a draft ODFW study, suggested that the dam will adversely affect downstream fishing, and the second, a soil survey prepared by the United States Soil Conservation Service (SCS), contained information that might be taken to indicate greater downstream turbidity than did the FEISS. As to both documents, the District Judge concluded that the Corps acted reasonably in relying on the opinions of independent and Corps experts discounting the significance of the new information. *Id.*, at 1567–1568. At the conclusion of his opinion, the District Judge directed that the motion for preliminary relief be consolidated with trial on the merits pursuant to Federal Rule of Civil Procedure 65(a)(2), and thus denied respondents’ claim for a permanent injunction as well.

The Court of Appeals reversed. 832 F. 2d 1489 (CA9 1987). Applying the same “reasonableness” standard of review employed by the District Court, the Court of Appeals reached a contrary conclusion, holding that the Corps had not adequately evaluated the cumulative environmental impact of the entire project. *Id.*, at 1497. Since the Corps did not seek review of that holding, we do not discuss it. The court also held that the FEISS was defective because it did not include a complete mitigation plan and because it did not contain a “worst case analysis.” *Id.*, at 1493–1494, 1496–1497. These holdings were erroneous for the reasons stated in our opinion in *Robertson v. Methow Valley Citizens Council*,

ante, p. 332, and will not be further discussed. With regard to the failure to prepare a second supplemental EIS, the Court of Appeals concluded that the ODFW and SCS documents brought to light "significant new information" concerning turbidity, water temperature, and epizootic¹² fish disease; that this information, although "not conclusive," is "probably accurate;" and that the Corps' experts failed to evaluate the new information with sufficient care. 832 F. 2d, at 1494–1496. The court thus concluded that a second supplemental EIS should have been prepared. Judge Wallace, writing in dissent, took issue with the majority's analysis of the new information. In his view, it was reasonable for the Corps to have concluded, based on its own expert evaluation, that the information contained in the ODFW document was inaccurate, and that the information contained in the SCS document was insignificant. *Id.*, at 1500 (opinion concurring in part and dissenting in part).

III

The subject of postdecision supplemental environmental impact statements is not expressly addressed in NEPA.¹³

¹² An epizootic disease is one that affects many animals of the same kind at the same time. See 832 F. 2d, at 1496, n. 5.

¹³ NEPA provides in pertinent part:

"The Congress authorizes and directs that, to the fullest extent possible . . . (2) all agencies of the Federal Government shall—

"(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on—

"(i) the environmental impact of the proposed action,

"(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,

"(iii) alternatives to the proposed action,

"(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

Preparation of such statements, however, is at times necessary to satisfy the Act's "action-forcing" purpose.¹⁴ NEPA does not work by mandating that agencies achieve particular substantive environmental results. Rather, NEPA promotes its sweeping commitment to "prevent or eliminate damage to the environment and biosphere" by focusing Government and public attention on the environmental effects of proposed agency action. 42 U. S. C. § 4321. By so focusing agency attention, NEPA ensures that the agency will not act on incomplete information, only to regret its decision after it is too late to correct. See *Robertson, ante*, at 349. Similarly, the broad dissemination of information mandated by NEPA permits the public and other government agencies to react to the effects of a proposed action at a meaningful time. *Ante*, at 349–350. It would be incongruous with this approach to environmental protection, and with the Act's manifest concern with preventing uninformed action, for the blinders to adverse environmental effects, once unequivocally removed, to be restored prior to the completion of agency action simply because the relevant proposal has received initial approval. As we explained in *TVA v. Hill*, 437 U. S. 153, 188, n. 34 (1978), although "it would make sense to

"(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented." 83 Stat. 853, 42 U. S. C. § 4332.

¹⁴Cf. Andreen, *In Pursuit of NEPA's Promise: The Role of Executive Oversight in the Implementation of Environmental Policy*, 64 Ind. L. J. 205, 247–248 (1989) (Supplementation is at times necessary because "[t]he entire efficacy of the EIS process is called into question when changes are made to a project after the publication of a final impact statement").

The term "action forcing" was introduced during the Senate's consideration of NEPA, see *Kleppe v. Sierra Club*, 427 U. S. 390, 409, n. 18 (1976), and refers to the notion that preparation of an EIS ensures that the environmental goals set out in NEPA are "infused into the ongoing programs and actions of the Federal Government," 115 Cong. Rec. 40416 (1969) (remarks of Sen. Jackson). See also 40 CFR § 1500.1(a) (1987) ("Section 102(2) contains 'action-forcing' provisions to make sure that federal agencies act according to the letter and spirit of the Act").

hold NEPA inapplicable at some point in the life of a project, because the agency would no longer have a meaningful opportunity to *weigh* the benefits of the project versus the detrimental effects on the environment," up to that point, "NEPA cases have generally required agencies to file environmental impact statements when the remaining governmental action would be environmentally 'significant.'" ¹⁵

This reading of the statute is supported by Council on Environmental Quality (CEQ) and Corps regulations, both of which make plain that at times supplementation is required. The CEQ regulations, which we have held are entitled to substantial deference, see *Robertson, ante*, at 355–356; *Andrus v. Sierra Club*, 442 U. S. 347, 358 (1979), impose a duty on all federal agencies to prepare supplements to either draft or final EIS's if there "are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." ¹⁶ Similarly, the Corps' own NEPA implementing regulations require the preparation of a supplemental EIS if "new significant impact information, criteria or circumstances relevant to environmental

¹⁵ In support of this latter proposition, we cited *Environmental Defense Fund v. TVA*, 468 F. 2d 1164 (CA6 1972), with approval. In that case the Court of Appeals upheld an injunction barring the continued construction of a dam on the Little Tennessee River pending the filing of an adequate EIS, notwithstanding the fact that the project was initially approved and construction commenced prior to the effective date of NEPA.

¹⁶ The CEQ regulation provides, in part:

"Agencies:

"(1) Shall prepare supplements to either draft or final environmental impact statements if:

"(i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or

"(ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.

"(2) May also prepare supplements when the agency determines that the purposes of the Act will be furthered by doing so." 40 CFR § 1502.9(c) (1987).

considerations impact on the recommended plan or proposed action.”¹⁷

The parties are in essential agreement concerning the standard that governs an agency’s decision whether to prepare a supplemental EIS. They agree that an agency should apply a “rule of reason,” and the cases they cite in support of this standard explicate this rule in the same basic terms. These cases make clear that an agency need not supplement an EIS every time new information comes to light after the EIS is finalized.¹⁸ To require otherwise would render agency decisionmaking intractable, always awaiting updated information only to find the new information outdated by the time a decision is made.¹⁹ On the other hand, and as petition-

¹⁷The Corps regulations provide in relevant part:

“*Supplements.* A Supplement to the draft or final EIS on file will be prepared whenever significant impacts resulting from changes in the proposed plan or new significant impact information, criteria or circumstances relevant to environmental considerations impact on the recommended plan or proposed action as discussed in 40 CFR 1502.9(c). A supplement to a draft EIS will be prepared, filed and circulated in the same manner as a draft EIS A supplement to a final EIS will be prepared and filed first as a *draft* supplement and then as a *final* supplement. . . .” 33 CFR § 230.11(b) (1987).

¹⁸Compare *Warm Springs Dam Task Force v. Gribble*, 621 F. 2d 1017, 1024 (CA9 1980) (cited in Brief for Respondents 32), and *Stop H-3 Assn. v. Dole*, 740 F. 2d 1442, 1463–1464 (CA9 1984) (same), cert. denied, 471 U. S. 1108 (1985), with *Cuomo v. NRC*, 249 U. S. App. D. C. 54, 57, 772 F. 2d 972, 975 (1985) (*per curiam*) (cited in Reply Brief for Petitioners 14), and *Friends of the River v. FERC*, 231 U. S. App. D. C. 329, 345, 720 F. 2d 93, 109 (1983) (same).

¹⁹In other contexts we have observed:

“‘Administrative consideration of evidence . . . always creates a gap between the time the record is closed and the time the administrative decision is promulgated. . . . If upon the coming down of the order litigants might demand rehearing as a matter of law because some new circumstance has arisen, some new trend has been observed, or some new fact discovered, there would be little hope that the administrative process could ever be consummated in an order that would not be subject to re-

ers concede, NEPA does require that agencies take a “hard look” at the environmental effects of their planned action, even after a proposal has received initial approval. See Brief for Petitioners 36. Application of the “rule of reason” thus turns on the value of the new information to the still pending decisionmaking process. In this respect the decision whether to prepare a supplemental EIS is similar to the decision whether to prepare an EIS in the first instance: If there remains “major Federal actio[n]” to occur, and if the new information is sufficient to show that the remaining action will “affec[t] the quality of the human environment” in a significant manner or to a significant extent not already considered, a supplemental EIS must be prepared.²⁰ Cf. 42 U. S. C. § 4332(2)(C).

opening.’” *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U. S. 519, 554–555 (1978) (quoting *ICC v. Jersey City*, 322 U. S. 503, 514 (1944)). See also *Northern Lines Merger Cases*, 396 U. S. 491, 521 (1970) (same).

²⁰ CEQ regulations define the term “significantly” as follows:

“‘Significantly’ as used in NEPA requires considerations of both context and intensity:

“(a) *Context*. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. . . .

“(b) *Intensity*. This refers to the severity of impact. . . . The following should be considered in evaluation of intensity:

“(1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

“(2) The degree to which the proposed action affects public health or safety.

“(3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

“(4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.

[Footnote 20 is continued on p. 375]

The parties disagree, however, on the standard that should be applied by a court that is asked to review the agency's decision. Petitioners argue that the reviewing court need only decide whether the agency decision was "arbitrary and capricious," whereas respondents argue that the reviewing court must make its own determination of reasonableness to ascertain whether the agency action complied with the law. In determining the proper standard of review, we look to § 10e of the Administrative Procedure Act (APA), 5 U. S. C. § 706, which empowers federal courts to "hold unlawful and set aside agency action, findings, and conclusions" if they fail to conform with any of six specified standards.²¹ We conclude

"(5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

"(6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about future consideration.

"(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. . . .

"(8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historic resources.

"(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat

"(10) Whether the action threatens a violation of Federal, State, or local law" 40 CFR § 1508.27 (1987).

²¹Title 5 U. S. C. § 706(2) provides that a reviewing court shall

"hold unlawful and set aside agency action, findings, and conclusions found to be—

"(A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;

"(B) contrary to constitutional right, power, privilege, or immunity;

"(C) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right;

"(D) without observance of procedure required by law;

"(E) unsupported by substantial evidence in a case subject to sections 556 and 557 of this title or otherwise reviewed on the record of any agency hearing provided by statute; or

that review of the narrow question before us whether the Corps' determination that the FEISS need not be supplemented should be set aside is controlled by the "arbitrary and capricious" standard of § 706(2)(A).

Respondents contend that the determination whether the new information suffices to establish a "significant" effect is either a question of law or, at a minimum, a question of ultimate fact and, as such, "deserves no deference" on review. Brief for Respondents 29. Apparently, respondents maintain that the question for review centers on the legal meaning of the term "significant" or, in the alternative, the predominantly legal question whether established and uncontested historical facts presented by the administrative record satisfy this standard. Characterizing the dispute in this manner, they posit that strict review is appropriate under the "in accordance with law" clause of § 706(2)(A) or the "without observance of procedure required by law" provision of § 706(2)(D). We disagree.

The question presented for review in this case is a classic example of a factual dispute the resolution of which implicates substantial agency expertise. Respondents' claim that the Corps' decision not to file a second supplemental EIS should be set aside primarily rests on the contentions that the new information undermines conclusions contained in the FEISS, that the conclusions contained in the ODFW memorandum and the SCS survey are accurate, and that the Corps' expert review of the new information was incomplete, incon-

"(F) unwarranted by the facts to the extent that the facts are subject to trial de novo by the reviewing court.

"In making the foregoing determinations, the court shall review the whole record or those parts of it cited by a party, and due account shall be taken of the rule of prejudicial error."

It is uncontested that the present controversy is not controlled by §§ 706(2)(E) or 706(2)(F), which primarily apply in cases involving either agency rulemaking or adjudication. Nor is there a claim that the Corps exceeded its constitutional authority under § 706(2)(B) or its statutory authority under § 706(2)(C).

clusive, or inaccurate. The dispute thus does not turn on the meaning of the term "significant" or on an application of this legal standard to settled facts. Rather, resolution of this dispute involves primarily issues of fact.²² Because analysis of the relevant documents "requires a high level of technical expertise," we must defer to "the informed discretion of the responsible federal agencies." *Kleppe v. Sierra Club*, 427 U. S. 390, 412 (1976). See also *Baltimore Gas & Electric Co. v. Natural Resources Defense Council, Inc.*, 462 U. S. 87, 103 (1983) ("When examining this kind of scientific determination . . . a reviewing court must generally be at its most deferential"). Under these circumstances, we cannot accept respondents' supposition that review is of a legal question and that the Corps' decision "deserves no deference." Accordingly, as long as the Corps' decision not to supplement the FEISS was not "arbitrary or capricious," it should not be set aside.²³

²² Of course, whenever a court reviews an agency decision or action under the APA, some legal standard is involved. Otherwise, there would be "no law to apply" and thus no basis for APA review. See *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U. S. 402, 410 (1971) (discussing 5 U. S. C. § 701(a)(2)).

²³ Respondents note that several Courts of Appeals, including the Court of Appeals for the Ninth Circuit as articulated in this and other cases, have adopted a "reasonableness" standard of review, see, e. g., *Sierra Club v. Froehlke*, 816 F. 2d 205, 210 (CA5 1987); *Enos v. Marsh*, 769 F. 2d 1363, 1373 (CA9 1985); *National Wildlife Federation v. Marsh*, 721 F. 2d 767, 782 (CA11 1983); *Massachusetts v. Watt*, 716 F. 2d 946, 948 (CA1 1983); *Monarch Chemical Works, Inc. v. Thone*, 604 F. 2d 1083, 1087-1088 (CA8 1979), and argue that we should not upset this well-settled doctrine. This standard, however, has not been adopted by all of the Circuits. See, e. g., *Wisconsin v. Weinberger*, 745 F. 2d 412, 417 (CA7 1984) (adopting "arbitrary and capricious" standard). Moreover, as some of these courts have recognized, the difference between the "arbitrary and capricious" and "reasonableness" standards is not of great pragmatic consequence. See *Manasota-88, Inc. v. Thomas*, 799 F. 2d 687, 692, n. 8 (CA11 1986) ("As a practical matter, . . . the differences between the 'reasonableness' and 'arbitrary and capricious' standards of review are often difficult to discern"); *River Road Alliance, Inc. v. Corps of Engineers of United States Army*,

As we observed in *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U. S. 402, 416 (1971), in making the factual inquiry concerning whether an agency decision was “arbitrary or capricious,” the reviewing court “must consider whether the decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment.” This inquiry must “be searching and careful,” but “the ultimate standard of review is a narrow one.” *Ibid.* When specialists express conflicting views, an agency must have discretion to rely on the reasonable opinions of its own qualified experts even if, as an original matter, a court might find contrary views more persuasive. On the other hand, in the context of reviewing a decision not to supplement an EIS, courts should not automatically defer to the agency’s express reliance on an interest in finality without carefully reviewing the record and satisfying themselves that the agency has made a reasoned decision based on its evaluation of the significance—or lack of significance—of the new information. A contrary approach would not simply render judicial review generally meaningless, but would be contrary to the demand that courts ensure that agency decisions are founded on a reasoned evaluation “of the relevant factors.”

IV

Respondents’ argument that significant new information required the preparation of a second supplemental EIS rests on two written documents. The first of the documents is the so-called “Cramer Memorandum,” an intraoffice memorandum prepared on February 21, 1985, by two scientists employed by ODFW. See Cramer Memorandum 3a.²⁴ The Cramer Memorandum, in turn, relied on a draft ODFW

764 F. 2d 445, 449 (CA7 1985) (“[W]e are not sure how much if any practical difference there is between ‘abuse of discretion’ and ‘unreasonable’”), cert. denied, 475 U. S. 1055 (1986). Accordingly, our decision today will not require a substantial reworking of long-established NEPA law.

²⁴The Cramer Memorandum is reprinted in the brief for petitioners. Page references are to the appendix to that brief.

study describing the effects of the Lost Creek Dam on fish production. The second document is actually a series of maps prepared in 1982 by SCS to illustrate the composition of soil near the Elk Creek shoreline. The information was provided to the Corps for use in managing the project. Although respondents contend that the maps contained data relevant to a prediction of the dam's impact on downstream turbidity, the maps do not purport to shed any light on that subject. Nor do they purport to discuss any conditions that had changed since the FEISS was completed in 1980. The Corps responded to the claim that these documents demonstrate the need for supplementation of the FEISS by preparing a formal Supplemental Information Report, dated January 10, 1986. See U. S. Army Corps of Engineers, Portland District, Elk Creek Lake Supplemental Information Report No. 2, p. 7a (hereinafter SIR).²⁵ The SIR explained: "While it is clear based upon our review that this information does not require additional NEPA documentation, Corps regulations provide that a Supplemental Information Report can be used to disseminate information on points of concern regarding environmental impacts set forth in the EIS."²⁶

The significance of the Cramer Memorandum and the SCS survey is subject to some doubt. Before respondents commenced this litigation in October 1985, no one had suggested that either document constituted the kind of new information that made it necessary or appropriate to supplement the FEISS. Indeed, the record indicates that the Corps was not provided with a copy of the Cramer Memorandum until after

²⁵ The SIR is reprinted in the brief for petitioners. Page references are to the appendix to that brief.

²⁶ Corps regulations provide:

"Whenever it is clearly understood that an EIS supplement is not necessary but where [it] is only necessary to provide supplemental information to a point of concern discussed in the final EIS . . . a supplemental information report will be prepared and filed with EPA." 33 CFR § 230.11(d) (1987).

the lawsuit was filed. Since the probative value of that document depends largely on the expert qualification of its authors, the fact that they did not see fit to promptly apprise the Corps of their concern—or to persuade ODFW to do so—tends to discount the significance of those concerns. Similarly, the absence of any pretrial expression of concern about the soil characteristics described in the 1982 SCS survey is consistent with the view that it shed little, if any, new light on the turbidity potential of the dam. Yet, even if both documents had given rise to prompt expressions of concern, there are good reasons for concluding that they did not convey significant new information requiring supplementation of the FEISS.

The Court of Appeals attached special significance to two concerns discussed in the Cramer Memorandum: the danger that an increase in water temperature downstream during fall and early winter will cause an early emergence and thus reduce survival of spring chinook fry and the danger that the dam will cause high fish mortality from an epizootic disease. Both concerns were based partly on fact and partly on speculation.

With respect to the first, the Cramer Memorandum reported that the authors of the draft ODFW study had found that warming of the Rogue River caused by the Lost Creek Dam had reduced the survival of spring chinook fry; however, the extent of that reduction was not stated, nor did the memorandum estimate the extent of warming to be expected due to closure of the Elk Creek Dam. Instead, the memorandum estimated that an increase of only one degree centigrade in river temperature in January would decrease survival of spring chinook “from by 60–80%.” Cramer Memorandum 3a. The authors of the memorandum concluded that because the Elk Creek Dam is likely to increase the temperature of the Rogue River, further evaluation of this effect should be completed “before ODFW sets its final position on this project.” *Ibid.*

The Corps' response to this concern in its SIR acknowledged that the "biological reasoning is sound and has been recognized for some time," but then explained why the concern was exaggerated. SIR 10a. The SIR stressed that because the model employed by ODFW had not been validated, its predictive capability was uncertain. Indeed, ODFW scientists subsequently recalculated the likely effect of a one-degree-centigrade increase in temperature, adjusting its estimate of a 60-to-80 percent loss downward to between 30 and 40 percent. *Id.*, at 9a. Moreover, the SIR supplied a variable missing in the Cramer Memorandum, suggesting that the Elk Creek Dam would, in most cases, either reduce or leave unchanged the temperature of the Rogue River. *Id.*, at 10a. Discernible increases were only found in July, August, and December of the study year, and even during those months the maximum temperature increase was only 0.6 degrees centigrade. *Ibid.* Finally, the SIR observed that the Cramer Memorandum failed to take into account the dam's beneficial effects, including its ability to reduce peak downstream flow during periods of egg incubation and fry rearing and its ability to reduce outflow temperature through use of the multiport structure.²⁷ *Id.*, at 9a-10a. Given these

²⁷ In this respect, the SIR noted that "[t]he reduction in peak floodflows can partially or fully offset the negative effects of temperature increases on fry survival," and any remaining adverse effects can be "further mitigated by the ability of the intake tower to regulate outflow temperatures." SIR 9a-10a. A letter sent from ODFW to the Corps in August 1985 supports the conclusion that the multiport system can be used to regulate temperature. The letter, reporting on an attempt to reduce outflow temperature at the Lost Creek Dam, asserts:

"The experimental reduction in outflow temperatures last October and November, in conjunction with other factors, appears to have improved survival to the fry stage. We had the lowest number on record of wild fish spawning, yet this spring we had the second highest abundance of spring chinook fry on record. The low density of spawners, the absence of floods last winter, and the low incubation temperatures all contributed to the high survival of chinook eggs. We do not know yet what the river temperatures last October-November would have been without the dam, but re-

positive factors, the Corps concluded that any adverse effects of the 0.6-degree temperature increase can be offset. *Id.*, at 10a.

With respect to the second concern emphasized by the Court of Appeals, the Cramer Memorandum reported the fact that "an unprecedented 76% of the fall chinook in 1979 and 32% in 1980 were estimated to have died before spawning" and then speculated that the Lost Creek Dam, which had been completed in 1977, was a contributing cause of this unusual mortality.²⁸ Cramer Memorandum 4a. The Corps responded to this by pointing out that the absence of similar epizootics after the closure of the Applegate Dam and the evidence of prespawning mortality in the Rogue River prior to the closing of the Lost Creek Dam were inconsistent with the hypothesis suggested in the Cramer Memorandum. See SIR 10a-11a. In addition, the Corps noted that certain diseased organisms thought to have been the cause of the unusually high mortality rates were not found in the outflow from the Lost Creek Dam.²⁹ *Id.*, at 11a.

lease temperatures were lower than previous years since dam closure." Letter from Dr. John R. Donaldson of August 15, 1985, Admin. Record, Doc. No. 109.

²⁸ The authors made clear that their concern was not based on any identifiable nexus between the dam closure and the epizootics:

"We have not determined the actual cause of the epizootics in 1979 and 1980, but we suspect that Lost Creek Dam contributed to them because no such mortality of fall chinook had been documented previously." Cramer Memorandum 4a.

As Judge Wallace noted in his dissenting opinion, the Cramer Memorandum did not address the possibility that diseased hatchery fish, rather than the Lost Creek Dam, caused the 1979 and 1980 epizootics. See 832 F. 2d 1489, 1501 (CA9 1987) (opinion concurring in part and dissenting in part).

²⁹ The Cramer Memorandum also raised concerns about the effect of increased downstream flow on fishing and fish production. The memorandum explained that "[a]nglers and guides have complained that high flows have 'washed out' many of their favorite fishing riffles and that fly angling is no longer effective in most areas because the water is too deep and swift." *Id.*, at 4a. In addition, the memorandum observed that "in-

In thus concluding that the Cramer Memorandum did not present significant new information requiring supplementation of the FEISS, the Corps carefully scrutinized the proffered information. Moreover, in disputing the accuracy and significance of this information, the Corps did not simply rely on its own experts. Rather, two independent experts hired by the Corps to evaluate the ODFW study on which the Cramer Memorandum was premised found significant fault in the methodology and conclusions of the study.³⁰ We also think it relevant that the Cramer Memorandum did not express the official position of ODFW. See SIR 9a. In preparing the memorandum, the authors noted that the agency had “adopted a neutral stand on Elk Creek Dam” and argued that new information raised the question whether “our agency should continue to remain neutral.”³¹ Cramer Memo-

creased flows during September and October cause spring chinook to spawn higher on the gravel bars and this increases the chances that redds will be dewatered when flows are reduced as the dams fill during February-April.” *Ibid.* However, as the SIR observed, the FEISS did indicate that construction of the dam would cause some unavoidable adverse effects on fishing. See SIR 11a. Moreover, the Cramer Memorandum did not suggest that there has been, or will likely be, any significant increase in mortality due to dewatering or that this effect cannot be minimized through control of the dam’s outflow. *Ibid.*

³⁰The first of these experts, although agreeing with portions of the ODFW study, indicated that the study “contains considerable statistical inaccuracies, over-extension of statistical methods and undue biological speculation that detracts from an otherwise very laudable professional effort.” S. B. Mathews, Critique of Lost Creek Dam Fisheries Evaluation 1, Admin. Record, Doc. No. 112. The second, although providing a generally more positive assessment of the study, indicated that comparisons between predam and postdam years “is not likely to yield conclusive results.” L. Calvin, Lost Creek Dam Fisheries Evaluation, Phase I Completion Report 2, Admin. Record, Doc. No. 114.

³¹Their memorandum concluded:

“Harry, the spring chinook runs on the Rogue are at an all-time low point. Anglers are becoming increasingly frustrated and upset about low runs, shortened seasons and smaller bag limits. They are also becoming more vocal. We feel the agency stands to lose much of its credibility if we con-

randum 3a. The concerns disclosed in the memorandum apparently were not sufficiently serious to persuade ODFW to abandon its neutral position.

The Court of Appeals also expressed concern that the SCS survey, by demonstrating that the soil content in the Elk Creek watershed is different than assumed in the FEISS, suggested a greater turbidity potential than indicated in the FEISS. 832 F. 2d, at 1495. In addition, the court observed that ODFW scientists believe that logging and road building in the Elk Creek watershed has caused increased soil disturbance resulting in higher turbidity than forecast by the FEISS. *Ibid.* As to this latter point, the SIR simply concluded that although turbidity may have increased in the early 1980's due to logging, "watershed recovery appears to have occurred to reduce the turbidity levels back to those of the 1970's." SIR 12a. The implications of the SCS soil survey are of even less concern. As discussed in the FEISS, water quality studies were conducted in 1974 and 1979 using computer simulation models. FEISS 33. The 1974 study indicated that turbidity in the Rogue River would increase by no more than one to three JTU's as a result of the Elk Creek Dam, and the 1979 study verified this result. *Ibid.* These studies used water samples taken from Elk Creek near the proposed dam site and from near the Lost Creek Dam, and thus did not simply rely on soil composition maps in drawing their conclusions. *Id.*, at 18-19, 21-22, 33-34. Although the SIR did not expressly comment on the SCS survey, in light of the in-depth 1974 and 1979 studies, its conclusion that "the turbidity effects are not expected to differ from those described in the 1980 EISS" surely provided a legitimate rea-

tinue to support Elk Creek Dam after knowing what has occurred to the adult spring chinook returns following completion of Lost Creek Dam. The Commission should be made aware of this new information and the possible consequences if they continue to hold to the middle of the road." Cramer Memorandum 5a.

son for not preparing a supplemental FEISS to discuss the subject of turbidity. SIR 12a.

There is little doubt that if all of the information contained in the Cramer Memorandum and SCS survey was both new and accurate, the Corps would have been required to prepare a second supplemental EIS. It is also clear that, regardless of its eventual assessment of the significance of this information, the Corps had a duty to take a hard look at the proffered evidence. However, having done so and having determined based on careful scientific analysis that the new information was of exaggerated importance, the Corps acted within the dictates of NEPA in concluding that supplementation was unnecessary. Even if another decisionmaker might have reached a contrary result, it was surely not "a clear error of judgment" for the Corps to have found that the new and accurate information contained in the documents was not significant and that the significant information was not new and accurate. As the SIR demonstrates, the Corps conducted a reasoned evaluation of the relevant information and reached a decision that, although perhaps disputable, was not "arbitrary or capricious."

The judgment of the Court of Appeals is accordingly reversed, and the case is remanded for further proceedings consistent with this opinion.

It is so ordered.